

ATTACHMENT FOR SPECIFICATION AMENDMENTS

The following is a marked up version of each replacement paragraph and/or section of the specification in which underlines indicate insertions and brackets indicate deletions.

[0011] Therefore, as a method of preventing such a situation, there is a method [of designing by] using a CI value ratio as a reference. This CI value ratio is such that the CI value of a harmonic wave is divided by the CI value of a fundamental wave (CI value of harmonic wave/CI value of fundamental wave).

[0013] In order to make the CI value ratio [to be] 1.0 or more in the manner described above, it is necessary to make the CI value of the harmonic wave greater. As a method therefor, it is known that the length (d1) of the excitation electrodes 12b and 13b formed in the grooves 12a and 13a is made to be half, i.e., 0.5L, with respect to the length (L) of the vibration arm sections 12 and 13 in Fig. 11.

[0014] Fig. 13 shows the relationship between the CI value of the fundamental wave, such as the above, and the CI value ratio. As shown in Fig. 13, the shorter the length (d1) of the excitation electrodes 12b and 13b becomes with respect to the length (L) of the vibration arm sections 12 and 13 [becomes,] the more the CI value of the fundamental wave is increased, and thereby the CI value ratio is also increased.

[0015] In contrast, the longer the length (d1) of the excitation electrodes 12b and 13b becomes with respect to the length (L) of the vibration arm sections 12 and 13 [becomes,] the more the CI value of the fundamental wave is decreased, and at the

same time, also, the CI value ratio approaches 1.0. For example, when the length (d1) of the excitation electrodes 12b and 13b becomes 60% of the length (L) of the vibration arm sections 12 and 13, the CI value ratio becomes 1.0 or less.

[0021] However, if the CI value of the harmonic wave is increased to such a degree that the CI value of the fundamental wave is not increased too much, it is not easy to make [that the] CI value ratio [is made] to be 1.0 or more. Therefore, a problem inevitably arises in that the CI value of the fundamental wave is increased more than necessary.

[0035] An object of the present invention is to provide a vibrating reed in which the ratio of CI values is maintained constant while minimizing the CI value of the fundamental wave[,] such that variations of the CI values between the vibrating piece devices are reduced even if the base is made short, and the entire vibrating piece can be made smaller.

[0157] As shown in Fig. 19(a), grooved portions 120a and 130a are formed on the obverse surface 120e and the rear surface 120f [20f] of the tuning-fork arm 120 (grooved-portion forming step).